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EXAMINER	
LACLAIR, DARCY D	
ART UNIT	PAPER NUMBER
1763	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

INFO@ORTPATENT.COM

Office Action Summary	Application No.	Applicant(s)	
	10/565,324	UEDA ET AL.	
	Examiner	Art Unit	
	Darcy D. LaClair	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 August 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6-14,22-26 and 29-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-4,6-14,22-26 and 29-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on **8/9/2010** has been entered.

All outstanding rejections, except for those maintained below are withdrawn in light of the amendment filed on **8/9/2010**.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Double Patenting

Note MPEP 804: "Further, those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of whether a claim in the application defines an obvious variation of an invention claimed in the patent. In re Vogel, 422 F.2d 438, 441-42, 164 USPQ 619, 622 (CCPA 1970)."

2. **Claims 1, 6-10, 22-26, 29-39** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over **claims 1-4, 6, 21-22, 24, 26, 27-29** of copending **Application No. 10/555,707** (Published as **US 2006/0276598**). Although the conflicting claims are not identical, they are not

patentably distinct from each other because both applications teach similar highly absorbent resin compositions and uses thereof.

With regard to Claim 1, 8, 10 and 29-39, the copending application claims a process for production of a water absorbent resin (claim 1) or a water absorbent resin having a water absorption capacity of not less than 40 g/g without load (claim 3, 10), a total absorption capacity not less than 78 g/g (claim 28), and not less than 70 g/g *under load* (claim 4), which includes an inorganic powder (claim 26) or a deodorant (claim 27). The inorganic powder and deodorant are present in 0.01 to 10 parts per 100 parts of resin, and the inorganic powder in the resin has a particle diameter of less than 150 microns. (Claim 23) The specification of the copending application teaches that favorable deodorants include "composite hydrous oxides of zinc-silicon or zinc-aluminum, which are cited in Japanese patent Application 280373/2003," (see p. 32, line 10) to which the instant application claims priority. Based on the similarities between the teachings of the instant application, which claims priority to JP 2003-280373, and the direction of the conflicting patent to this document for deodorant hydrous oxides, it would be obvious to one of ordinary skill in the art to employ a complex oxide hydrate consistent with the instant complex, and falling within the mass ratio range; further, based on the teachings of a diameter of less than 150 microns, it would be obvious to select any inorganic particle additives within this size range, which encompasses the instant teachings.

With regard to Claim 6 and 7, the copending application teaches that a suitable deodorant includes extracts from leaves of Theaceae plants (see p. 32 line 8), and

additives including hydrophilic short fibers are also be included (see p. 31 line 15), and in certain uses, a fibrous material is favorable (see p. 34 line 5-6, p. 50 line 5).

With regard to Claims 9 and 22, the copending application teaches that a back sheet made of liquid impermeable material, and a surface (top) sheet made of liquid permeable material can be put on the two sides of a molded portion of this water absorbent resin. (see p. 42, Example 3)

With regard to Claims 23 and 25, the copending application claims the resin has a temperature of 40 to 80°C when the surface crosslink-treating agent is added (claim 2) and teaches the crosslinking treatment is carried out by heating after the agent has been added, specifically in a range of 60 to 260°C, particularly preferably from 120°C to 200°C. (see p. 22 line 21-30)

With regard to Claims 24 and 26, the copending application claims the surface-crosslinking agent includes a polyhydric alcohol. (claim 22)

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

3. **Claims 1, 4, 6-10, 12, 22-26 and 29-39** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over **claims 1-6, 10, 12, 14, 18-25** of copending **Application No. 10/570,965** (Published as **US 2007/0066167**) in view of **Kurihara et al. (US 5,110,586).** . Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications teach similar highly absorbent resin compositions and uses thereof.

With regard to Claim 1, 8, 10 and 29-39, the copending application claims a particulate water absorbent resin (claim 1, 2, 3) or a method for making a water absorbent resin (claim 20, 21, 22) having a water absorption capacity of not lower than 21 g/g against a pressure of 4.8 kPa, (claim 3, 18), or not lower than 20 g/g against a pressure of 1.9 kPa (claim 6) which includes a polyvalent metal salt, an inorganic fine particle, and a deodorant (claim 10). The inorganic fine particle can be a composite hydrated oxide. (Claim 14) The specification teaches that a composite hydrated oxide containing zinc and silicon or zinc and aluminum can be added. (See p. 38 line 7-13) This particle would have a size of 0.001 to 200 microns (p. 38 line 6) and additives to the resin are added in 0.001 to 5 parts by weight. (See p. 35 line 28) The copending application does not explicitly teach a ratio of zinc to the silicon or aluminum.

Kurihara teaches a deodorizer comprising zinc oxide and at least one of aluminum oxide and silicon oxide. (See abstract) The deodorizer is suitable for incorporation in conventional plastics as well as cosmetics, sanitary products, and disposable diapers. (See col 3 line 30-40) The ratio of zinc oxide to the second oxide is from 5:95 to 95:5, (see col 2 line 50-59) and exemplifies Zn:Al_2O_3 ratios of 80:20 and 84:14. (See Table 1) These exemplified compositions fall near and within applicant's claimed range. Furthermore, the data shows that the greatest reduction in H_2S as well as ammonia and other odorants is obtained at the high Zn ratio of 84:14. Thus it would be obvious to one of ordinary skill in the art to use a Zn:Al ratio of 84:14 or to optimize the ratio within that range to determine the most optimum concentration. Furthermore, it would be obvious to one of ordinary skill in the art to use the deodorant particle of

Kurihara as the microfiller and deodorant in the composition of the copending application in order to take advantage of the deodorizing abilities of the particle. Applicant states on page 11 of the Remarks submitted 8/9/2010, that one of ordinary skill in the art would recognize that other absorbent resins containing a Zn-Si/Al oxide would have an enhanced odor absorbing property. Thus it would be obvious to one of ordinary skill in the art to use the odor absorbing deodorizer of Kurihara in any absorbent resin, such as that of the copending application.

With regard to Claim 2, Kurihara teaches that the composition of a soluble zinc compound and at least one compound selected from aluminum, silicon, and mixtures thereof, which are then co-precipitated to obtain a white precipitate. (See col 2 line 11-24) The simultaneous mixing and precipitation of the soluble metal compounds allows the formation of precipitated metal salts (or complexes) having a composition corresponding to the concentration of the aqueous solution.

With regard to Claim 4 and 12, the copending application claims the median particle size of the water absorbing agent in the range 200 to 400 μm, (claim 1-3, 20-22), 90 – 100% by weight of the particulate has a diameter in the range 150μm to 600 μm (claim 5), and a step or removing coarse particles having diameters above 400μm is claimed (claim 23-25).

With regard to Claim 6 and 7, the copending application claims a deodorant which is a component made from a plant (claim 12), and an absorbing article which is molded by comprising a particulate water absorbing agent and hydrophilic fibers (claim 19).

With regard to Claims 9 and 22, the copending application teaches that an absorbing article prepared by sandwiching the absorbing core between a substrate with liquid permeability (surface sheet) and a substrate with liquid non-permeability (back sheet). (see p. 49, line 25-28)

With regard to Claims 23 and 25, the copending application teaches that the heating temperature after addition of the surface crosslinking agent is in the range of 100 to 250°C. (see p. 30 line 30-33)

With regard to Claims 24 and 26, the copending application teaches a surface-crosslinking agent can be polyhydric alcohol. (see p. 29 line 3-9)

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

4. **Claims 1, 4, 6-10, 22-26 and 29-39** are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over **claims 1-13** of **US Patent No. 7,510,988**. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications teach similar highly absorbent resin compositions and uses thereof.

With regard to Claim 1, 8, 10, **and 29-39,** the conflicting patent claims a particulate water absorbent resin (claim 1, 2) or a method for making a water absorbent resin (claim 10) having a water an absorbency under a pressure of 4.8 kPa of not less than 20 g/g (claim 1,2). The water absorbing agent further contains a multivalent metallic salt, an inorganic fine particle, and a deodorant (Claim 4). The specification of

the conflicting patent teaches a composite hydrous oxide as a deodorant which contains a "composite hydrous oxides of zinc-silicon or zinc-aluminum, (see Japanese Unexamined patent Application Tokugan 2003-280373" (see p. 55, line 20-25) to which the instant application claims priority. The additives such as the multivalent metallic salt, inorganic fine particle, and/or deodorant are present in 0.001-5 parts per 100 parts of resin. (See col 20 line 13-21) and a diameter of 0.001 to 200 microns is suggested for inorganic particles being added to the composition. (See col 20 line 57) Based on the similarities between the teachings of the instant application, which claims priority to JP 2003-280373, and the direction of the conflicting patent to this document for deodorant hydrous oxides, it would be obvious to one of ordinary skill in the art to employ a complex oxide hydrate consistent with the instant complex, and falling within the mass ratio range; further, based on the teachings of a diameter of 0.001 to 200 microns, it would be obvious to select any inorganic particle additives within this size range, which encompasses the instant teachings.

With regard to Claim 4, the conflicting patent claims the mass average particle diameter of the water absorbing agent in the range 200 to 450 μm, with 0-5% mass being smaller than150μm. (claim 1-2,10)

With regard to Claim 6 and 7, the conflicting patent teaches a plant extract (see p. 54 line 1-11), and claims hydrophilic fibers as a part of the structure formed from the particulate water absorbing agent (claim 9).

With regard to Claims 9 and 22, the conflicting patent teaches that an absorbing article prepared by sandwiching the absorbing core between a substrate with

liquid permeability (surface sheet) and a substrate with liquid non-permeability (back sheet). (see p. 74, line 11-14)

With regard to Claims 23 and 25, the conflicting patent requires surface crosslinking and describes the procedure. (See Claims 1, 2) The specification teaches that this procedure is performed at 120°C to 250°C. (See col 17 line 40-41)

With regard to Claims 24 and 26, the surface crosslinking agent is a polyhydric alcohol such as 1,3-propanediol, *inter alia*. (Claim 5) This is of the polyvalent alcohol type suggested by the specification. (See col 15 line 56-67)

5. **Claims 1, 4, 6-10, 22-26, and 29-39** are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over **claims 1, 6, 11-15,** of **U.S. Patent No. 7,473,470**. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications teach similar highly absorbent resin compositions and uses thereof.

With regard to Claim 1, 8, 10 and 29-39, the conflicting patent claims a particulate water absorbent resin (claim 1) or a method for making a water absorbent resin (claim 15) having a centrifuge retention capacity not lower than 32 g/g, and absorbency against pressure of 1.9 kPa of not lower than 20 g/g, (claim 6) which includes a polyvalent metal salt, an inorganic fine particle, and a deodorant (claim 10). The specification teaches that a composite hydrated oxide containing zinc and silicon or zinc and aluminum can be added (see col 19 line 19-25) and that these additives should be present from 0.001 to 5 parts per 100 parts of resin. (See col 18 line 4-13) Further,

the specification teaches that inorganic particles added to the composition are preferably from 0.001 to 200 microns in size. The specification of the conflicting patent teaches a composite hydrous oxide as a deodorant which contains a "composite hydrous oxides of zinc-silicon or zinc-aluminum, (see Japanese Unexamined patent Application Tokugan 2003-280373" (see col 18, line 20-25) to which the instant application claims priority. Based on the similarities between the teachings of the instant application, which claims priority to JP 2003-280373, and the direction of the conflicting patent to this document for deodorant hydrous oxides, it would be obvious to one of ordinary skill in the art to employ a complex oxide hydrate consistent with the instant complex, and falling within the mass ratio range; further, based on the teachings of a diameter of 0.001 to 200 microns, it would be obvious to select any inorganic particle additives within this size range, which encompasses the instant teachings.

With regard to Claim 4, the conflicting patent claims the mass median particle size of the water absorbing agent in the range 200 to 400 μm, and particles of the agent smaller than 600 μm and not smaller than 150 μm are in the range of 95 – 100% by weight (claim 1, 15).

With regard to Claim 6 and 7, the conflicting patent describes a deodorant which is a component made from a plant (see p. 37 line 12-33), and claims an absorbing article which is molded by comprising a particulate water absorbing agent and hydrophillic fibers (claim 12, 14).

With regard to Claims 9 and 22, the conflicting patent teaches that an absorbing article prepared by sandwiching the absorbing core between a substrate with

liquid permeability (surface sheet) and a substrate with liquid non-permeability (back sheet). (See p. 50, line 1-5)

With regard to Claims 23 and 25, the conflicting patent teaches that the heating temperature after addition of the surface crosslinking agent is in the range of 100°C to 250°C. (See p. 28 line 1-7)

With regard to Claims 24 and 26, the conflicting patent teaches a surface-crosslinking agent can be polyhydric alcohol. (See p. 26 line 5-11)

Specification

6. The disclosure is objected to because of the following informalities:

Example 9 describes mass ratio of zinc and aluminum 90/10 but refers to Referential Example 1 to show how the oxide hydrate is obtained. Referential Example 1 is the preparation of a resin, and therefore is not consistent with the description in the text of Example 9 with respect to what the specification teaches. It is considered possible that “Example 1” is a typographical error and should have been one of Examples 10, 11, or 12, all of which start with a 1 and refer to the preparation of a complex oxide hydrate, however Referential Examples 10-12 describe the preparation of complex oxide hydrates 85/18 Zinc/Silicon (RE10), 85/15 Zinc/Aluminum (RE11), and 91/9 Titanium/Silicon (RE12). Similarly, Example 8 describes a mass ratio of zinc and silicon of 90/10 but refers to Referential Example 10, which describes 85/15. In both cases, it is not clear what the example actually uses, because the ratio given (85/15)

and the preparation procedure(90/10) are directed to different products. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. **Claims 1, 8, 10, and 34-39** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Specifically, with respect to **Claims 1, 8, 10, 35, 37, and 39**, applicant has directed attention to Example 9 as support for the amendment describing the oxide hydrate as containing zinc and silicon or zinc and aluminum, wherein the parts by weight and particle size of the oxide hydrate particle are described. Example 9 describes mass ratio of zinc and aluminum 90/10 but refers to Referential Example 1 to show how the oxide hydrate is obtained. Referential Example 1 is the preparation of a resin, and therefore is not consistent with the description in the text of Example 9 with respect to what the specification teaches. It is considered possible that “Example 1” is a typographical error and should have been one of Examples 10, 11, or 12, all of which start with a 1 and refer to the preparation of a complex oxide hydrate, however Referential Examples 10-12 describe the preparation of complex oxide hydrates 85/18 Zinc/Silicon (RE10), 85/15 Zinc/Aluminum (RE11), and 91/9 Titanium/Silicon (RE12). Similarly, Example 8 describes a mass ratio of zinc and silicon of 90/10 but refers to

Referential Example 10, which describes 85/15. In both cases, it is not clear what the example actually uses, because the ratio given (85/15) and the preparation procedure(90/10) are directed to different products. Thus support for the combination of zinc and silicon and zinc and aluminum with a range of 82/18 - 99/1 is not supported, and specifically, support for 90/10 appears to be absent or convoluted by the confusion in the specification.

With respect to **Claim 34, 36, and 38**, the complex oxide hydrate used in Example 1 and all other examples which do not explicitly state a change is 82/18 and has a particle size of 0.36 micron, but neither the Referential Examples, nor the Examples describe a particle size in combination with the prepared 85/5 or 90/10 (see discussion above) particles. It is not described that these prepared particles will have the same size as the commercially obtained 82/18 Ceratiox particles, and there appears to be no specific reason given to focus on the specific size of 0.36 microns, as the specification describes a range of 0.001 to 100 microns, or narrower ranges from 0.01 to 600, 500, or 300 microns, all of which are a very broad range around the particle size 0.36 microns. Thus it is there appears to be no particular support for both zinc and silicon as well as zinc and aluminum at 0.36 microns, nor is there support for this highly specific particle size in combination with a ratio of zinc to the other compound of any ratio other than 82/18.

Claim Rejections - 35 USC § 103

8. **Claims 1-4, 6-14, 22-26 and 29-39** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Takai et al. (US 6,284,362)** in view of **Kurihara et al. (US 5,110,586).**

With regard to Claim 1 and 10, Takai teaches an absorbent composition having a microfiller and a hydrogel having a water absorptive resin, (see abstract) prepared by mixing a microfiller with a water absorptive resin in a hydrogel. (see col 3 line 45-50) The water absorbent resin has a crosslinked structure and an absorption amount for physiological saline under applied pressure of 20 g/cm^2 that is 25 g/g or more. (see col 4 line 63-65) Twenty grams per centimeter squared is equal to 1.96 kPa. The resin is obtained by polymerizing a radical polymerizable monomer such as unsaturated mono or polycarboxylic acids. (See col 7 line 1-7, 26-44) The microfiller is be an inorganic filler, or one or a mixture of at least two selected from a group including silicon and aluminum oxides. (See col 4 line 40-45) The micro-filler is present in 0.005 to 10 parts per 100 parts of resin (see col 4 line 19) and has a particle size of 0.001 to 200 microns. (See col 4 line 39) Furthermore, Takai teaches that deodorants, zeolite, and so forth are be added to the mixture during or after the drying step. (See col 15 line 10-13) Takai does not explicitly teach the details for the microfiller mixture of these oxides or the use of zinc in combination with these metal oxides.

Kurihara teaches a deodorizer comprising zinc oxide and at least one of aluminum oxide and silicon oxide. (See abstract) The deodorizer is suitable for incorporation in conventional plastics as well as cosmetics, sanitary products, and

disposable diapers. (See col 3 line 30-40) The ratio of zinc oxide to the second oxide is from 5:95 to 95:5, (see col 2 line 50-59) and exemplifies Zn:Al_2O_3 ratios of 80:20 and 84:14. (See Table 1) These exemplified compositions fall near and within applicant's claimed range. Furthermore, the data shows that the greatest reduction in H_2S as well as ammonia and other odorants is obtained at the high Zn ratio of 84:14. Thus it would be obvious to one of ordinary skill in the art to use a Zn:Al ratio of 84:14 or to optimize the ratio within that range to determine the most optimum concentration. Furthermore, it would be obvious to one of ordinary skill in the art to use the deodorant particle of Kurihara as the microfiller and deodorant in the composition of Takai in order to take advantage of the deodorizing abilities of the particle. Applicant states on page 11 of the Remarks submitted 8/9/2010, that one of ordinary skill in the art would recognize that other absorbent resins containing a Zn-Si/Al oxide would have an enhanced odor absorbing property. Thus it would be obvious to one of ordinary skill in the art to use the odor absorbing deodorizer of Kurihara in any absorbent resin, such as that of Takai.

With regard to Claim 2, Kurihara teaches that the composition of a soluble zinc compound and at least one compound selected from aluminum, silicon, and mixtures thereof, which are then co-precipitated to obtain a white precipitate. (See col 2 line 11-24) The simultaneous mixing and precipitation of the soluble metal compounds allows the formation of precipitated metal salts (or complexes) having a composition corresponding to the concentration of the aqueous solution.

With regard to Claim 3 and 11, Takai teaches resins which have a similar chemical makeup to those of applicant, specifically, primarily composed of acrylic acid

polymerized to yield a gel. (See Example 1, applicant's Referential Example 1) Takai incorporates the microfiller and any other fillers prior to the drying step (while the resin gel is in a swollen state), and subsequently dries the resin so that the absorptive resin particles contain a built in micro-filler. (See col 3 line 45-50, col 15 line 10-13) Takai also teaches that the method further includes surface crosslinking the mixture after drying (col 5 line 30-31) The method of Takai insures that the fillers are contacted to the resin in its swollen state (built in), and surface crosslinking would provide a further security to prevent separation when the gel is in a swollen state. Based on the similarity in the chemical composition of the resin composition of Takai in view of Kurihara to that presented by applicant, and the additional steps taught by Takai to insure that any fillers or microfillers would be "built in," it is the examiner's position that a separation ratio consistent with applicants, or less, would be observed from this combination.

With regard to Claim 4, 12, 13, and 14, Takai teaches that the absorbent composition has a particle size from 200μm to 700μm and preferably 250μm to 600μm, and the particle size distribution greater than 100μm and less than 1000μm is 90%, or preferably 95% by mass or more. (see col 16 line 23-26) This presents a particle size distribution that is substantially similar to that required by applicant. Specifically, if the composition has a preferable particle size above 250μm but less than 600μm, then a typical Gaussian distribution would have the bulk of the particles exceeding 300μm in diameter. Takai also teaches that particles larger than 700μm will have a lower absorption speed, (see col 16 line 27-30) which would motivate one of ordinary skill in the art to bring the particle size below that size. Furthermore, the dictate that particles

outside the range 100μm-1000μm are less than 95% by mass or more, in combination with the instruction that particles of 200μm or more are easier to handle (see col 16 line 30-37), would motivate one of ordinary skill in the art to avoid particles less than 150μm. One of ordinary skill in the art, given the instructions of Takai with regard to particle size, would arrive at a particle size consistent with that claimed by applicant.

With regard to Claim 6 - 8, Takai teaches that when the invention is used as an absorbent product, the absorption layer includes the absorbent composition and a fibrous material. (See col 20 line 14-15) Materials such as pulp, synthetic fibers, and natural fibers are enumerated. (See col 20 line 28-33) Pulp is consistent with applicant's "ground wood pulp" (see p. 40 line 25). This is a cellulosic product, and is hydrophilic. This is supported by applicant's inclusion of pulp as a hydrophilic fiber. Furthermore, pulp (deriving from trees or other cellulosic plants) as well as "natural fibers" which includes such materials as cotton, are plant components. With regard, specifically, to claim 8, see the discussion with regard to Claim 1, above, for the remainder of the components and limitations.

With regard to Claim 9 and 22, Takai teaches a non-water permeable sheet which is located outside and a water permeable sheet which is located inside (product relative to the body, here "outside" would be consistent with the bottom sheet, and "inside" would be consistent with the top sheet), with a absorption layer located between the two sheets. (see col 20 line 19-22)

With regard to Claims 23 and 25, Takai exemplifies a thermal crosslinking process (surface crosslinked) of 140°C. (See example 2, 8)

With regard to Claims 24 and 26, Takai teaches examples of crosslinking agents used at surface crosslinking process including polyol compounds, such as glycerol, ethylene glycol, polyethylene glycol). This is consistent with applicant's "polyhydric alcohol," which includes polyethylene glycols and glycerin (see applicant's p. 15 line 4-8)

With regard to Claims 29-30, Takai teaches that the microfiller, for which it would be obvious to incorporate the oxide hydrate of Kurihara, is present in 0.005 to 10 parts per 100 parts of resin. (See col 4 line 19) This encompasses applicant's claimed ranges.

With regard to Claims 31-33, Takai teaches a particle size of 0.001 to 200 microns for the microfiller. (See col 4 line 39)

With respect to Claims 34, 36, and 38, Takai teaches the presence of a inorganic, *inter alia*, microfiller, for which it would be obvious to incorporate the oxide hydrate of Kurihara, present in 0.005 to 10 parts per 100 parts of resin, which encompasses both 0.1 and 0.5 parts per 100 parts by weight. Furthermore, the particle diameter is 0.001 to 200 microns. (See col 4 line 39) This encompasses the 0.36 micron diameter claimed by applicant. It is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. See *In re Harris*, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re*

Malagari, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974) Furthermore, the surface area of the particle directly affects the contact area for odorants, and is also directly determined by the diameter of the particle. It would be obvious to one of ordinary skill in the art to optimize the particle diameter within the range taught by Takai to determine the optimum deodorizing efficiency based on the surface area of Kurihara's particle.

With respect to Claims 35, 37, and 39, Kurihara teaches a deodorizer comprising zinc oxide and at least one of aluminum oxide and silicon oxide (see abstract) having a ratio of zinc oxide to the second oxide is from 5:95 to 95:5. (See col 2 line 50-59) Kurihara specifically exemplifies a $ZnO:Al_2O_3$ ratio of 84:14, which is *about* 82/18. (See Table 1) The data shows that the greatest reduction in H_2S as well as ammonia and other odorants is obtained at this ratio. It would be obvious to one of ordinary skill in the art to use a Zn:Al ratio of 84:14 or to optimize the ratio within that range to determine the most optimum concentration, which would provide a complex oxide hydrate having a composition near or about 82/10 or 90/10, which are close in composition to the Kurihara's exemplified composition. Furthermore, it would be obvious to one of ordinary skill in the art to use the deodorant particle of Kurihara as the microfiller and deodorant in the composition of Takai in order to take advantage of the deodorizing abilities of the particle

Response to Arguments

9. Applicant's arguments filed **8/9/2010** have been fully considered. Specifically, applicant argues

(A) Applicants have amended Claims 1, 8, and 10 to include two features of the recited complex oxide hydrate; the relative weight and the particle size of the complex oxide hydrate. While not acquiescing to the correctness of the rejection, this amendment meets two of the requests made by the examiner to correct the 112, first paragraph issue set forth. With regard to requirement (3), Example 9 uses Zn-Al, and thus both Zn-Al and Zn-Si are used in the example, contrary to the examiner's assertion.

(B) Applicants have submitted unexpected results which show compositions having Zn oxide and Si/Al oxide at the ratio of 82/18 or 90/10 have excellent deodorizing effect. Furthermore, the resin recited in the claims is not overly broad because one of ordinary skill in the art would recognize that any absorbing resin would have enhanced odor absorbing property when combined with the complex oxide hydrate particle. Applicants have further amended the independent claims to limit the weight of the complex oxide hydrate. Further, applicant has submitted data showing the statistical relevance of the experimental data submitted thus far. This data shows that the observed differences in the data is significant. Further, the examiner has compared two comparative examples in the Examiner's answer, neither of which exemplifies a Tai composition. Examples 5 and 6 correspond to Tai compositions. Further, the inventive composition absorbs NH3 which is an additional odorant.

(C) Applicants will address the double patenting rejection after the obviousness rejection has been removed.

10. **With respect to argument (A),** applicant's arguments have been considered, but are moot in view of the new 112 rejections set forth above.

With respect to argument (B), applicant's arguments have been considered, but are moot in view of the rejection set forth above.

With respect to argument (C), Applicant is advised that the provisional obviousness-type double patenting rejection of record set forth above are being maintained until properly overcome.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darcy D. LaClair whose telephone number is (571)270-5462. The examiner can normally be reached on Monday-Friday 8:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Milton I. Cano/
Supervisory Patent Examiner, Art Unit 1763

Darcy D. LaClair
Examiner
Art Unit 1763

/DDL/